

IN THE CLAIMS:

1. (Currently Amended) A broadcasting apparatus that broadcasts a specific program to which a reproduction time period between a starting time and a finishing time is specified, the reproduction being performed by a receiving apparatus, the broadcasting apparatus comprising:

5 allotment unit operable to allot a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to another program;

script generation unit operable to generate (a) when ~~receiving the receiving~~
10 ~~apparatus receives~~ a storage instruction, a script ~~instructing the receiving apparatus to store for~~
~~storing~~ program data of the specific program in a storage unit of the receiving apparatus, and (b)
when ~~receiving the receiving apparatus receives~~ a reproduction instruction, a script ~~instructing~~
~~for~~ the receiving apparatus to reproduce the program data of the specific program in a case where
the program data of the specific program has been stored in the storage unit;

15 message generation unit operable to generate a plurality of storage instructions and a reproduction instruction;

transmission unit operable to ~~[[a)]~~ transmit a normal program that includes a
video stream and an audio stream, and further in accordance with the result of allotment by the
allotment unit, repeatedly ~~transmit~~ multiplex program data of the other program with the normal
20 program based on a data carousel transmission method and transmit a first multiplexed result
while transmitting multiplexing the program data of the specific program and the script with the
normal program and transmitting a second multiplexed result in the preceding time period, and

repeatedly ~~transmitting~~ multiplex the program data of the specific program and the script with
the normal program and transmit the second multiplexed result in the reproduction time period,

25 and ~~(b) repeatedly transmit the scripts in a time period when the program data of the specific~~
~~program is transmitted; and~~

control unit operable to control the transmission unit to transmit the storage
instructions in the preceding time period and to transmit the reproduction instruction at the
starting time,

30 wherein ~~the transmission unit further transmits a normal program that includes a~~
~~video stream and an audio stream,~~ the specific program has the program data that relates to a
commercial message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

2. (Previously Presented) The broadcasting apparatus of Claim 1,

wherein the allotment unit allots the broadcasting bandwidth for the preceding
time period so that the part of the broadcasting bandwidth becomes narrower than the other part
of the broadcasting bandwidth, and

5 the preceding time period is longer than a time period that is necessary for
transmitting the program data of the specific program at least once using the part of the
bandwidth.

3. (Cancelled)

4. (Previously Presented) The broadcasting apparatus of Claim 1, further
comprising:

a storage unit for storing as the program data of the specific program (a) first contents data that makes up the specific program and (b) second contents data that is different
5 from the first contents data in part,

wherein the transmission unit transmits the first contents data in the preceding time period and transmits the second contents data in the reproduction time period of the specific program.

5-8. (Cancelled)

9. (Currently Amended) A broadcasting apparatus that transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, a total time period between a starting time and a finishing time for broadcasting the data broadcasting program including a first time period during which the first specific program is
5 broadcast and a second time period during which the second specific program is broadcast, the broadcasting apparatus comprising:

allotment unit operable to

(a) allot a part of the broadcasting bandwidth to the first and the second specific programs and the other part of the broadcasting bandwidth to the data broadcasting
10 program for all of the time periods other than the first and the second time periods in the total time-period, and

(b) allot a part of the broadcasting bandwidth to the first specific program and the other part of the broadcasting bandwidth to the second specific program for the first and the second time periods;

15 script instruction generation unit operable to (i) generate (a) when ~~receiving a~~
receiving apparatus receives a first storage instruction, a script ~~instructing the receiving~~

~~apparatus to store~~ for storing program data of the first specific program in a storage unit of the receiving apparatus and (b) when ~~receiving~~ the receiving apparatus receives a second storage instruction, a script ~~instructing the receiving apparatus to store~~ for storing program data of the second specific program in the storage unit and (ii) generate (a) when receiving a first reproduction instruction, a script instructing the receiving apparatus to reproduce the program data of the first specific program in a case that the program data of the first specific program has been stored in the storage unit and (b) when receiving a second reproduction instruction, a script ~~instructing~~ for the receiving apparatus to reproduce the program data of the second specific program-in a case that the program data of the second specific program has been stored in the storage unit;

message generation unit operable to generate a plurality of first storage instructions, a plurality of second storage instructions, a first reproduction instruction and a second reproduction instruction;

transmission unit operable to transmit a normal program that includes a video stream and an audio stream, and

(a) repeatedly transmit the scripts during the total time period, and

(b) in accordance with the result of allotment by the allotment unit,

(i) ~~transmit~~ repeatedly multiplex the program data of the data broadcasting program during all of time periods other than the first and the second time periods in the total time period, and

(ii) ~~transmit~~ repeatedly multiplex the program data of each of the first and the second specific programs during the total time period; and

control unit operable to control the transmission unit so as to transmit (a) the first storage instructions before the first time period (b) the first reproduction instruction at the

starting time of the first time period (c) the second storage instructions before the second time period, and (d) the second reproduction instruction at the starting time of the second time period,

wherein ~~the transmission unit further transmits a normal program that includes a video stream and an audio stream,~~ in accordance with the result of allotment by the allotment unit, repeatedly multiplex program data of the first and second specific program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific first and second programs and the script with the normal program and transmit the second multiplexed result in the reproduction time period.

the first specific program and the second specific program respectively have the program data that relates to a first commercial program and a second commercial program which are inserted in the normal program, and

the first time period and the second time period respectively are the same as broadcast time periods of the first commercial program and the second commercial program.

10. (Cancelled)

11. (Previously Presented) The broadcasting apparatus of Claim 9, further comprising:

storage unit operable to store as the program data of the first specific program (a) first contents data that makes up the first specific program and (b) second contents data that is different from the first contents data in part,

wherein the transmission unit transmits the first contents data in a time period other than the first time period in the total time period, and transmits the second contents data in the first time period.

12. (Currently Amended) A broadcasting apparatus that transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, the broadcasting apparatus comprising:

allotment unit operable to

5 (a) allot a broadcasting bandwidth for a first time period and a second time period to the first specific program and the second specific program, the first time period and the second time period are included in a total time period between a starting time and a finishing time for broadcasting the data broadcasting program, and

(b) allot (1) a broadcasting bandwidth to the data broadcasting data program
10 in the total time period except for the first time period and the second time period (2) a part of the broadcasting bandwidth to the first specific program for a time period preceding to the first time period in the total time period, and (3) a part of the broadcasting bandwidth to the second specific program for a time period preceding to the second time period in the total time period;

script instruction unit operable to (i) generate (a) when ~~receiving~~ a receiving
15 apparatus receives a first storage instruction, a script ~~instructing the receiving apparatus to store~~
for storing program data of the first specific program in a storage unit of the receiving apparatus
and (b) when ~~receiving~~ the receiving apparatus receives a second storage instruction, a script
~~instructing the receiving apparatus to store~~ for storing program data of the second specific
program in the storage unit and (ii) generate (a) when receiving a first reproduction instruction, a
20 script instructing the receiving apparatus to reproduce the program data of the first specific

program in a case that the program data of the specific program has been stored in the storage unit and (b) when receiving a second reproduction instruction, a script instructing the receiving apparatus to reproduce the program data of the second specific program in a case that the program data of the second specific program has been stored in the storage unit;

25 message generation unit operable to generate a plurality of first storage instructions, a plurality of second storage instructions, a first reproduction instruction and a second reproduction instruction;

 transmission unit operable to transmit a normal program that includes a video stream and an audio stream and

30 (a) repeatedly transmit during the total time period, and

 (b) in accordance with the result of allotment by the allotment unit,

 (i) transmit repeatedly the program data of the data broadcasting program during all of time periods other than the first and the second time periods in the total time period,

35 (ii) ~~transmitting~~ repeatedly multiplex the program data of the first specific program during the first time period and the time period preceding to the first time period, and

 (iii) ~~transmitting~~ repeatedly multiplex the program data of the second specific program during the second time period and the time period preceding to the second time

40 period; and

 unit operable to control the transmission unit so as to transmit (i) a plurality of the first storage instructions before the first time period (ii) a plurality of the second storage instructions before the second time period (iii) the first reproduction instruction at the starting

time of the first time period, and (iv) the second reproduction instruction at the starting time of
45 the second time period,

wherein ~~the transmission unit further transmits a normal program that includes a~~
~~video stream and an audio stream,~~ in accordance with the result of allotment by the allotment
unit, repeatedly multiplex program data of the first and second specific program with the normal
program based on a data carousel transmission method and transmit a first multiplexed result
50 while multiplexing the program data of the first and second specific programs and the script with
the normal program and transmitting a second multiplexed result in the preceding time period,
and repeatedly multiplex the program data of the specific first and second programs and the
script with the normal program and transmit the second multiplexed result in the reproduction
time period.

55 the first specific program and the second specific program respectively have the
program data that relates to a first commercial program and a second commercial program which
are inserted in the normal program, and

the first time period and the second time period respectively are the same as
broadcast time periods of the first commercial program and the second commercial program.

60 13. (Cancelled)

14. (Previously Presented) The broadcasting apparatus of Claim 12, further
comprising:

storage unit operable to store as the program data of the first specific program (a)
first contents data that makes up the first specific program and (b) second contents data that is
65 different from the first contents data in part,

wherein the transmission unit transmits the first contents data in a time period preceding to the first time period in the total time period, and transmits the second contents data in the first time period.

15. (Currently Amended) A broadcasting method for broadcasting a specific program to which a reproduction time period between a starting time and a finishing time is specified, the reproduction being performed by a receiving apparatus, the broadcasting method comprising the steps of:

5 an allotment step for allotting a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to another program;

10 a script generation step for generating (a) when receiving apparatus ~~receiving~~ receives a storage instruction, a script ~~instructing the receiving apparatus to store~~ for storing program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus ~~receiving~~ receives a reproduction instruction, a script ~~instructing for~~ the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit;

15 a message generation step for generating a plurality of storage instructions and a reproduction instruction;

a transmission step for [[a)] transmitting a normal program that includes a video stream and an audio stream, and further in accordance with the result of allotment in the allotment step, repeatedly ~~transmit~~ multiplex program data of the other program with the normal
20 program based on a data carousel transmission method and transmit a first multiplexed result

while ~~transmitting~~ multiplexing the program data of the specific program and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly ~~transmitting~~ multiplex the program data of the specific program and the script with the normal program and transmit the second multiplexed result in the reproduction time period,

25 and ~~(b) repeatedly transmit the scripts in a time period when the program data of the specific program is transmitted;~~ and

a control step operable for controlling a transmission unit to transmit the storage instructions in the preceding time period and to transmit the reproduction instruction at the starting time,

30 wherein ~~the transmission step, a normal program that includes a video stream and an audio stream is further transmitted,~~ the specific program has the program data that relates to a commercial message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

16. (Currently Amended) A broadcasting method for broadcasting a data broadcasting program and a first specific program and a second specific program which are inserted in the data broadcasting program, a total time period between a starting time and a finishing time for broadcasting the data broadcasting program including a first time period

5 during which the first specific program is broadcast and a second time period during which the second specific program is broadcast, the broadcasting method comprising the steps of:

an allotment step for

(a) allotting a part of the broadcasting bandwidth to the first and the second specific programs and the other part of the broadcasting bandwidth to the data broadcasting

10 program for all of time periods other than the first and the second time periods in the total time period, and

(b) allotting a part of the broadcasting bandwidth to the first specific program and the other part of the broadcasting bandwidth to the second specific program for the first and the second time periods;

15 a script instruction generation step for (i) generating (a) when ~~receiving a~~
~~receiving apparatus receives~~ a first storage instruction, a script ~~instructing the receiving~~
~~apparatus to store~~ for storing program data of the first specific program in a storage unit of the
receiving apparatus and (b) when receiving a second storage instruction, a script ~~instructing~~
~~receiving apparatus to store~~ for storing program data of the second specific program in the
20 storage unit, and (ii) generating (a) when receiving a first reproduction instruction, a script
~~instructing~~ for the receiving apparatus to reproduce the program data of the first specific program
in a case that the program data of the specific program has been stored in the storage unit and (b)
when receiving a second reproduction instruction, a script ~~instructing~~ for the receiving apparatus
to reproduce the program data of the second specific program in a case that the program data of
25 the second specific program has been stored in the storage unit;

a message generation step for generating a plurality of first storage instructions, a
plurality of second storage instructions, a first reproduction instruction and a second
reproduction instruction; and

a transmission step for transmitting a normal program that includes a video stream
30 and an audio stream, and

(a) repeatedly transmitting the scripts during the total time period,
transmitting the first storage instructions before the first time period (ii) the first reproduction
instruction at the starting time of the first time period (iii) the second storage instructions before

the second time period, and (iv) the second reproduction instruction at the starting time of the
35 second time period, and

(b) in accordance with the result of allotment by the allotment step,

(i) ~~transmitting~~ repeatedly multiplex the program data of the data
broadcasting program during all of time periods other than the first and second time periods in
the total time period, and with the normal program based on a data carousel transmission

40 (ii) ~~transmitting~~ repeatedly multiplex the program data of each of the
first and the second specific programs during the total time period with the normal program;

wherein, ~~in the transmission step, a normal program that includes a video stream
and an audio stream is further transmitted~~, the first and the second specific programs have the
program data that relates to first and second commercial messages, respectively, which are
45 inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

17. (Currently Amended) A broadcasting method for broadcasting a data
broadcasting program and a first specific program and a second specific program which are
inserted in the data broadcasting program, the broadcasting method comprising the steps of:

an allotment step for (a) allotting a broadcasting bandwidth for a first time period
5 and a second time period to the first specific program and the second specific program, the first
time period and the second time period are included in a total time period between a starting time
and a finishing time for broadcasting the data broadcasting program, and (b) allotting (1) a
broadcasting bandwidth to the data broadcasting data program in the total time period except for
the first time period and the second time period (2) a part of the broadcasting bandwidth to the

10 first specific program for a time period preceding to the first time period in the total time period,
and (3) a part of the broadcasting bandwidth to the second specific program for a time period
preceding to the second time period in the total time period;

a script instruction generation step for (i) generating (a) when receiving a first
storage instruction, a script ~~instructing the receiving apparatus to store~~ for storing program data
15 of the first specific program in a storage unit of ~~[[the]]~~ a receiving apparatus and (b) when
receiving a second storage instruction, a script ~~instructing the receiving apparatus to store~~ for
storing program data of the second specific program in the storage unit, and (ii) generating (a)
when receiving a first reproduction instruction, a script instructing the receiving apparatus to
reproduce the program data of the first specific program in a case that the program data of the
20 specific program has been stored in the storage unit and (b) when receiving a second
reproduction instruction, a script instructing the receiving apparatus to reproduce the program
data of the second specific program in a case that the program data of the second specific
program has been stored in the storage unit;

a message generation step for generating a plurality of first storage instructions, a
25 plurality of second storage instructions, a first reproduction instruction and a second
reproduction instruction; and

a transmission step for transmitting a normal program that includes a video stream
and an audio stream and further in accordance with the allotment step

repeatedly transmitting (i) the first storage instructions before the first time period
30 (ii) the second storage instructions before the second time period (iii) the first reproduction
instruction at the starting time of the first time period, and (iv) the second reproduction
instruction at the starting time of the second time period, during the total time period, and

(b) in accordance with the result of allotment by the allotment unit,

(i) ~~transmitting~~ repeatedly multiplexing the program data of the data
35 broadcasting program during all of time periods other than the first and the second time periods
in the total time period,

(ii) ~~transmitting~~ repeatedly multiplexing the program data of the first
specific program during the first time period and the time period preceding to the first time
period, and

40 (iii) ~~transmitting~~ repeatedly multiplexing the program data of the
second specific program during the second time period and the time period preceding to the
second time period; and

wherein, ~~in the transmission step, a normal program that includes a video stream
and an audio stream is further transmitted, in accordance with the result of allotment by the~~
45 allotment unit, repeatedly multiplex program data of the first and second specific program with
the normal program based on a data carousel transmission method and transmit a first
multiplexed result while multiplexing the program data of the first and second specific programs
and the script with the normal program and transmitting a second multiplexed result in the
preceding time period, and repeatedly multiplex the program data of the specific first and second
50 programs and the script with the normal program and transmit the second multiplexed result in
the reproduction time period,

the first and the second specific programs have the program data that relates to
first and second commercial messages, respectively, which are inserted in the normal program,
and

55 the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

18. (Currently Amended) A program recording medium which is readable for a computer in a broadcasting apparatus, the broadcasting apparatus broadcasts a specific program to which a reproduction time period between a starting time and finishing time is specified, the reproduction being performed by a receiving apparatus, a computer program embodied on the program recording medium has the computer conduct the steps of:

an allotment step for allotting a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to other program;

a script generation step for generating (a) when the receiving apparatus receives a storage instruction, a script ~~instructing the receiving apparatus to store~~ for storing program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus receives a reproduction instruction, a script ~~instructing~~ for the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit;

a message generation step for generating a plurality of storage instructions and a reproduction instruction; and

in accordance with the result of allotment by the allotment unit, repeatedly multiplex program data of the first and second specific program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific first and second programs and the script

with the normal program and transmit the second multiplexed result in the reproduction time
25 period.

a control step for controlling the transmission unit to transmit the storage instructions in the preceding time period and to transmit the reproduction instruction at the starting time,

wherein, ~~in the transmission step, a normal program that includes a video stream~~
30 ~~and an audio stream is further transmitted;~~ the specific program has the program data that relates to a commercial message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

19. (Currently Amended) A program recording medium which is readable for a computer in a broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting program and a first and a second specific programs which are inserted in the data broadcasting program, a total time period between a starting time and a finishing time for broadcasting the
5 data broadcasting program including a first time period during which the first specific program is broadcast and a second time period during which the second specific program is broadcast, a computer program embodied on the program recording medium has the computer conduct the steps of:

an allotment step for

10 (a) allotting a part of the broadcasting bandwidth to the first and the second specific programs and the other part of the broadcasting bandwidth to the data broadcasting program for all of time periods other than the first and the second time periods in the total time period, and

(b) allotting a part of the broadcasting bandwidth to the first specific program
15 and the other part of the broadcasting bandwidth to the second specific program for the first and
second time periods;

a script instruction generation step for (i) generating, when a receiving apparatus
receives a first storage instruction, a script ~~instructing the receiving apparatus to store~~ for storing
program data of the first specific program in a storage unit of the receiving apparatus and (b)
20 when receiving a second storage instruction, a script ~~instructing the receiving apparatus to store~~
for storing program data of the second specific program in the storage unit, and (ii) generating
(a) when receiving a first reproduction instruction, a script instructing the receiving apparatus to
reproduce the program data of the first specific program in a case that the program data of the
first specific program has been stored in the storage unit and (b) when receiving a second
25 reproduction instruction, script instructing the receiving apparatus to reproduce the program of
the second specific program; in a case that the program data of the second specific program has
been stored in the storage unit;

a message generation step for generating a plurality of first storage instructions, a
plurality of second storage instructions, a plurality of second storage instructions, a first
30 reproduction instruction and a second reproduction instruction; and

a transmission step for transmitting a normal program that includes a video stream
and an audio stream, and

repeatedly transmitting the scripts during the total time period, transmitting (i) the
first storage instructions before the first time period, the first reproduction instruction at the
35 starting time of the first time period (iii) the second storage instructions before the second time
period, and (iv) the second reproduction instruction at the starting time of the second time period,

(b) in accordance with the result of allotment by the allotment step,

(i) ~~transmitting~~ repeatedly multiplex the program data of the data
broadcasting program with the normal program based on a data carousel transmission method

40 during all of time periods other than the first and the second time periods in the total time period,
and

(ii) ~~transmitting~~ repeatedly multiplex the program data of each of the
first ~~[[ant]]~~ and the second specific program during the total time period;

wherein, ~~in the transmission step, a normal program that includes a video stream~~
45 ~~and an audio stream is further transmitted,~~ the first and the second specific programs have the
program data that relates to first and second commercial messages, respectively, which are
inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

20. (Currently Amended) A program recording medium which is readable for a
computer in a broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting
program and a first and a second specific programs which are inserted in the data broadcasting
program, a computer program embodied on the program recording medium has the computer
5 conduct the steps of:

an allotment step for (a) allotting a broadcasting bandwidth for a first time period
and a second time period to the first specific program and the second specific program, the first
time period and the second time period are included in a total time period between a starting time
and a finishing time for broadcasting the data broadcasting program, and (b) allotting (1) a
10 broadcasting bandwidth to the data broadcasting data program in the total time period except for
the first time period and the second-time period (2) a part of the broadcasting bandwidth to the

first specific program for a time period preceding to the first time period in the total time period,
and (3) a part of the broadcasting bandwidth to the second specific program for a time period
preceding to the second time period in the total time period;

15 a script instruction generation step for (i) generating (a) when a receiving
apparatus receives a first storage instruction, a script ~~instructing the receiving apparatus to store~~
for storing program data of the first specific program in a storage unit of the receiving apparatus
and (b) when receiving a second storage instruction, a script ~~instructing the receiving apparatus~~
~~to store~~ for storing program data of the second specific program in the storage unit and (ii)
20 generating (a) when receiving a first reproduction instruction, a script instructing the receiving
apparatus to reproduce the program data of the first specific program in a case that the program
data of the specific program has been stored in the storage unit and (b) when receiving a second
reproduction instruction, a script instructing the receiving apparatus to reproduce the program
data of the second specific program in a case that the program data of the second specific
25 program has been stored in the storage unit;

 a message generation step for generating a plurality of first storage instructions, a
plurality of second storage instructions, a first reproduction instruction and a second
reproduction instruction; and

 a transmission step for transmitting a normal program that includes a video stream
30 and an audio stream, and

 repeatedly transmitting (i) the first storage instructions before the first time period
(ii) the second storage instructions before the second time period (iii) the first reproduction
instruction at the starting time of the first time period, and (iv) the second reproduction
instruction at the starting time of the second time period, and

35 (b) in accordance with the result of allotment by the allotment step

(i) ~~transmitting~~ repeatedly multiplex the program data of the data broadcasting program during all of time periods other than the first and the second time periods in the total time period, and

(ii) ~~transmitting~~ repeatedly multiplex the program data of each of the first specific program during the first time period and the time period preceding to the first timer period; and

(iii) ~~transmitting~~ repeatedly multiplex the program data of the second specific program during the second time period and the time period preceding to the second time period;

wherein, ~~in the transmission step, a normal program that includes a video stream and an audio stream is further transmitted, in accordance with the result of allotment by the allotment step, repeatedly multiplex program data of the first and second specific program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while multiplexing the program data of the first and second specific programs and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly multiplex the program data of the specific first and second programs and the script with the normal program and transmit the second multiplexed result in the reproduction time period.~~

the first and the second specific programs have the program data that relates to first and second commercial messages, respectively, which are inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

21. (Currently Amended) A program that is readable for a computer in a broadcasting apparatus, the broadcasting apparatus broadcasts a specific program to which a reproduction time period between a starting time and finishing time is specified, the reproduction being performed by a receiving apparatus, the program has the computer conduct the steps of:

5 an allotment step for allotting a broadcasting bandwidth for the reproduction time period to the specific program and allotting a part of the broadcasting bandwidth for a preceding time period immediately before the reproduction time period to the specific program and the other part of the broadcasting bandwidth to another program;

10 a script generation step for generating (a) when receiving apparatus ~~receiving~~ receives a storage instruction, a script ~~instructing the receiving apparatus to store~~ for storing program data of the specific program in a storage unit of the receiving apparatus, and (b) when the receiving apparatus ~~receiving~~ receives a reproduction instruction, a script ~~instructing for~~ the receiving apparatus to reproduce the program data of the specific program in a case where the program data of the specific program has been stored in the storage unit;

15 a message generation step for generating a plurality of storage instructions and a reproduction instruction;

20 a transmission step for ~~[[a)]~~ transmitting a normal program that includes a video stream and an audio stream, and further in accordance with the result of allotment in the allotment step, repeatedly ~~transmit~~ multiplex program data of the other program with the normal program based on a data carousel transmission method and transmit a first multiplexed result while ~~transmitting~~ multiplexing the program data of the specific program and the script with the normal program and transmitting a second multiplexed result in the preceding time period, and repeatedly ~~transmitting~~ multiplex the program data of the specific program and the script with

the normal program and transmit the second multiplexed result in the reproduction time period,

25 ~~and (b) repeatedly transmit the scripts in a time period when the program data of the specific program is transmitted; and~~

a control step operable for controlling a transmission unit to transmit the storage instructions in the preceding time period and to transmit the reproduction instruction at the starting time,

30 ~~wherein in the transmission step, a normal program that includes a video stream and an audio stream is further transmitted,~~ the specific program has the program data that relates to a commercial message which is inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast time period of the commercial message.

22. (Currently Amended) A program that is readable for a computer in a broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting program, and a first and a second specific programs which are inserted in the data broadcasting program, a total time period between a starting time and a finishing time for broadcasting the data broadcasting
5 program including a first time period during which the first specific program is broadcast and a second time period during which the second specific program is broadcast the program has the computer conduct the steps of:

an allotment step for

(a) allotting a part of the broadcasting bandwidth to the first and the second
10 specific programs and the other part of the broadcasting bandwidth to the data broadcasting program for all of time periods other than the first and the second time periods in the total time period, and

(b) allotting a part of the broadcasting bandwidth to the first specific program and the other part of the broadcasting bandwidth to the second specific program for the first and
15 the second time periods;

a script instruction generation step for (i) generating (a) when ~~receiving a~~
receiving apparatus receives a first storage instruction, a script ~~instructing the receiving~~
~~apparatus to store~~ for storing program data of the first specific program in a storage unit of the
20 receiving apparatus and (b) when receiving a second storage instruction, a script ~~instructing~~
~~receiving apparatus to store~~ for storing program data of the second specific program in the
storage unit, and (ii) generating (a) when receiving a first reproduction instruction, a script
~~instructing~~ for the receiving apparatus to reproduce the program data of the first specific program
in a case that the program data of the specific program has been stored in the storage unit and (b)
when receiving a second reproduction instruction, a script ~~instructing~~ for the receiving apparatus
25 to reproduce the program data of the second specific program in a case that the program data of
the second specific program has been stored in the storage unit;

a message generation step for generating a plurality of first storage instructions, a
plurality of second storage instructions, a first reproduction instruction and a second
reproduction instruction; and

30 a transmission step for transmitting a normal program that includes a video stream
and an audio stream, and

(a) repeatedly transmitting the scripts during the total time period,
transmitting the first storage instructions before the first time period (ii) the first reproduction
instruction at the starting time of the first time period (iii) the second storage instructions before
35 the second time period, and (iv) the second reproduction instruction at the starting time of the
second time period, and

(b) in accordance with the result of allotment by the allotment step,

(i) ~~transmitting~~ repeatedly multiplex the program data of the data
broadcasting program during all of time periods other than the first and second time periods in
40 the total time period, and with the normal program based on a data carousel transmission

(ii) ~~transmitting~~ repeatedly multiplex the program data of each of the
first and the second specific programs during the total time period with the normal program;

wherein, ~~in the transmission step, a normal program that includes a video stream
and an audio stream is further transmitted~~, the first and the second specific programs have the
45 program data that relates to first and second commercial messages, respectively, which are
inserted in the normal program, and

the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

23. (Currently Amended) A program that is readable for a computer in a
broadcasting apparatus, the broadcasting apparatus transmits a data broadcasting program and a
first and a second specific programs which are inserted in the data broadcasting program, the
program has the computer conduct the steps of:

5 an allotment step for (a) allotting a broadcasting bandwidth for a first time period
and a second time period to the first specific program and the second specific program, the first
time period and the second time period are included in a total time period between a starting time
and a finishing time for broadcasting the data broadcasting program, and (b) allotting (1) a
broadcasting bandwidth to the data broadcasting data program in the total time period except for
10 the first time period and the second time period (2) a part of the broadcasting bandwidth to the
first specific program for a time period preceding to the first time period in the total time period,

and (3) a part of the broadcasting bandwidth to the second specific program for a time period preceding to the second time period in the total time period;

15 a script instruction generation step for (i) generating (a) when receiving a first storage instruction, a script ~~instructing the receiving apparatus to store~~ for storing program data of the first specific program in a storage unit of ~~[[the]]~~ a receiving apparatus and (b) when receiving a second storage instruction, a script ~~instructing the receiving apparatus to store~~ for storing program data of the second specific program in the storage unit, and (ii) generating (a) when receiving a first reproduction instruction, a script instructing the receiving apparatus to
20 reproduce the program data of the first specific program in a case that the program data of the specific program has been stored in the storage unit and (b) when receiving a second reproduction instruction, a script instructing the receiving apparatus to reproduce the program data of the second specific program in a case that the program data of the second specific program has been stored in the storage unit;

25 a message generation step for generating a plurality of first storage instructions, a plurality of second storage instructions, a first reproduction instruction and a second reproduction instruction; and

a transmission step for transmitting a normal program that includes a video stream and an audio stream and further in accordance with the allotment step

30 repeatedly transmitting (i) the first storage instructions before the first time period (ii) the second storage instructions before the second time period (iii) the first reproduction instruction at the starting time of the first time period, and (iv) the second reproduction instruction at the starting time of the second time period, during the total time period, and

(b) in accordance with the result of allotment by the allotment unit,

35 (i) ~~transmitting~~ repeatedly multiplexing the program data of the data
broadcasting program during all of time periods other than the first and the second time periods
in the total time period,

(ii) ~~transmitting~~ repeatedly multiplexing the program data of the first
specific program during the first time period and the time period preceding to the first time
40 period, and

(iii) ~~transmitting~~ repeatedly multiplexing the program data of the
second specific program during the second time period and the time period preceding to the
second time period; and

wherein, ~~in the transmission step, a normal program that includes a video stream
45 and an audio stream is further transmitted, in accordance with the result of allotment by the
allotment unit, repeatedly multiplex program data of the first and second specific program with
the normal program based on a data carousel transmission method and transmit a first
multiplexed result while multiplexing the program data of the first and second specific programs
and the script with the normal program and transmitting a second multiplexed result in the
50 preceding time period, and repeatedly multiplex the program data of the specific first and second
programs and the script with the normal program and transmit the second multiplexed result in
the reproduction time period,~~

the first and the second specific programs have the program data that relates to
first and second commercial messages, respectively, which are inserted in the normal program,
55 and

the reproduction time period of the specific program is the same as a broadcast
time period of the commercial message.

24. (Currently Amended) A broadcasting method for reducing television receiver latencies in displaying [[the]] an interactive content portion of broadcast television commercials, the method comprising the steps of:

assigning a television program to a first time slot and a commercial to a second
5 time slot immediately after the first time slot;

allocating a first portion of the available bandwidth of the first time slot to audiovisual content of the television program;

allocating a second portion of the available bandwidth of the first time slot to a specific program having interactive content for [[the]] a commercial;

10 allocating a first portion of the available bandwidth of the second time slot to the specific program;

allocating a second portion of the available bandwidth of the second time slot to audiovisual content of the commercial;

15 transmitting the audiovisual content of the television program during the first time slot;

repeatedly transmitting in a carousel format the specific program during the first time slot;

transmitting the audiovisual content of the commercial during the second time slot; [[and]]

20 repeatedly transmitting in a carousel format the specific program during the second time slot,

transmitting a script for storing the specific program,

transmitting a script for executing the specific program, and

receiving and storing the specific program at the television receiver.

25.-28. (Cancelled)